

## Complete Summary

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### GUIDELINE TITLE

Procedure guideline for parathyroid scintigraphy.

### BIBLIOGRAPHIC SOURCE(S)

Society of Nuclear Medicine. Procedure guideline for parathyroid scintigraphy. Version 3.0. Reston (VA): Society of Nuclear Medicine; 2004 Jun. 6 p.

### GUIDELINE STATUS

This is the current release of the guideline.

This guideline updates a previous version: Society of Nuclear Medicine. Procedure guideline for parathyroid scintigraphy, 2.0. Reston (VA): Society of Nuclear Medicine; 1999 Feb. 19 p. (Society of Nuclear Medicine procedure guidelines; no. 2.0).

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## SCOPE

### DISEASE/CONDITION(S)

Primary hyperparathyroidism due to adenomas or hyperplasia

### GUIDELINE CATEGORY

Diagnosis  
 Evaluation

### CLINICAL SPECIALTY

Nuclear Medicine  
Radiology

#### INTENDED USERS

Allied Health Personnel  
Physicians

#### GUIDELINE OBJECTIVE(S)

To assist nuclear medicine practitioners in recommending, performing, interpreting, and reporting the results of parathyroid scintigraphy

#### TARGET POPULATION

Adults with primary hyperparathyroidism

#### INTERVENTIONS AND PRACTICES CONSIDERED

Parathyroid scintigraphy

#### MAJOR OUTCOMES CONSIDERED

Not stated

### METHODOLOGY

#### METHODS USED TO COLLECT/SELECT EVIDENCE

Hand-searches of Published Literature (Primary Sources)  
Hand-searches of Published Literature (Secondary Sources)  
Searches of Electronic Databases

#### DESCRIPTION OF METHODS USED TO COLLECT/SELECT THE EVIDENCE

Literature searches were performed. In addition, references known to experts and references from the nuclear medicine community were considered.

#### NUMBER OF SOURCE DOCUMENTS

Not stated

#### METHODS USED TO ASSESS THE QUALITY AND STRENGTH OF THE EVIDENCE

Not stated

#### RATING SCHEME FOR THE STRENGTH OF THE EVIDENCE

Not applicable

## METHODS USED TO ANALYZE THE EVIDENCE

Review

## DESCRIPTION OF THE METHODS USED TO ANALYZE THE EVIDENCE

Not stated

## METHODS USED TO FORMULATE THE RECOMMENDATIONS

Expert Consensus

## DESCRIPTION OF METHODS USED TO FORMULATE THE RECOMMENDATIONS

Drafts of the guideline were submitted to members of the Guideline Development subcommittee (methodologists) and the Task Force (subject experts). These reviewers indicated on a line-by-line basis any suggestions or recommendations for the revision of the guideline. The percentage of agreement for all reviewers was calculated for each revision and compiled by the Society of Nuclear Medicine (SNM) central office. It is expected that the percentage of agreement will increase with each revision.

## RATING SCHEME FOR THE STRENGTH OF THE RECOMMENDATIONS

Not applicable

## COST ANALYSIS

There are now some studies that show that use of single photon emission computer tomography (SPECT) as a pre-operative evaluation may shorten operative time and reduce cost.

## METHOD OF GUIDELINE VALIDATION

Internal Peer Review

## DESCRIPTION OF METHOD OF GUIDELINE VALIDATION

When the Task Force and Guideline Development Subcommittee completed their edits, draft procedure guidelines were distributed to the Society of Nuclear Medicine (SNM) Sample Review Group for comment. (The SNM Sample Review Group is a cross-section of approximately 100 nuclear medicine practitioners representing every field of specialization).

The guideline was approved by the SNM Commission on Health Care Policy, the Board of Directors, and the House of Delegates.

The update was approved June 2004.

## RECOMMENDATIONS

### MAJOR RECOMMENDATIONS

#### Background Information and Definitions

Primary hyperparathyroidism is characterized by increased synthesis and release of parathyroid hormone, which produces an elevated serum calcium level and a decline in serum inorganic phosphates. Asymptomatic patients are frequently diagnosed as a result of screening by automatic multichemistry panels. The vast majority of cases of primary hyperparathyroidism (80 to 85%) are the result of single or multiple hyperfunctioning adenomas. Hyperplasia of several or all parathyroid glands accounts for approximately 12 to 15% of cases, whereas parathyroid carcinomas occur in only 1 to 3% of cases of hyperparathyroidism. In general, parathyroid adenomas larger than 500 mg can be detected scintigraphically. <sup>99m</sup>Tc-sestamibi allows detection of hyperplastic glands, although with less sensitivity than adenomas.

Dual-phase or double-phase imaging refers to utilizing <sup>99m</sup>Tc-sestamibi and acquiring early and delayed images. Dual-isotope or subtraction studies refer to protocols using 2 different radiopharmaceuticals for imaging acquisition.

#### Examples of Clinical or Research Applications

- A. To localize hyperfunctioning parathyroid tissue (adenomas or hyperplasia) in primary hyperparathyroidism. This may be useful before surgery to help the surgeon find the lesion, thus shortening the time of the procedure.

Although the use of preoperative localizing procedures, including parathyroid scintigraphy, has been controversial, sestamibi scans have been shown to be accurate and to reduce the time and, therefore, the cost of an initial operation for hyperparathyroidism. Selected high-surgical-risk patients and those with life-threatening adenomas are especially likely to benefit from parathyroid scintigraphy. An unequivocally positive study will aid the surgeon in streamlining the surgical procedure.

- B. To localize hyperfunctioning parathyroid tissue (usually adenomas) in patients with persistent or recurrent disease. Many of these patients will already have had 1 or more surgical procedures, making reexploration much more technically difficult. Also, ectopic tissue is much more prevalent in this population, and preoperative localization will likely increase surgical success, in part by sometimes helping to direct the surgical approach.

#### Procedure

The detailed procedure recommendations in the guideline address the following areas: patient preparation; information pertinent to performing the procedure (i.e., important data that the physician should have about the patient at the time the exam is performed and interpreted); precautions; information regarding the

radiopharmaceutical (i.e., ranges of administered activity, organ receiving the largest radiation dose, effective dose), image acquisition; interventions; processing; interpretation/reporting; quality control, and sources of error.

#### CLINICAL ALGORITHM(S)

None provided

### EVIDENCE SUPPORTING THE RECOMMENDATIONS

#### TYPE OF EVIDENCE SUPPORTING THE RECOMMENDATIONS

The type of evidence supporting the recommendations is not specifically stated.

### BENEFITS/HARMS OF IMPLEMENTING THE GUIDELINE RECOMMENDATIONS

#### POTENTIAL BENEFITS

The intent of the procedure guideline is to describe parathyroid scintigraphy, in order to maximize the diagnostic information obtained in the study while minimizing the resources that are expended.

#### POTENTIAL HARMS

Not stated

### QUALIFYING STATEMENTS

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- The Society of Nuclear Medicine (SNM) has written and approved these guidelines as an educational tool to promote the cost-effective use of high quality nuclear medicine procedures or in the conduct of research and to assist practitioners in providing appropriate care for patients. The guidelines should not be deemed inclusive of all proper procedures nor exclusive of other procedures reasonably directed to obtaining the same results. They are neither inflexible rules nor requirements of practice and are not intended nor should they be used to establish a legal standard of care. For these reasons, SNM cautions against the use of these guidelines in litigation in which the clinical decisions of a practitioner are called into question.
- The ultimate judgment about the propriety of any specific procedure or course of action must be made by the physician when considering the circumstances presented. Thus, an approach that differs from the guidelines is not necessarily below the standard of care. A conscientious practitioner may responsibly adopt a course of action different from that set forth in the guidelines when, in his or her reasonable judgment, such course of action is indicated by the condition of the patient, limitations on available resources, or advances in knowledge or technology subsequent to publication of the guidelines.

- All that should be expected is that practitioner will follow a reasonable course of action based on current knowledge, available resources, and the needs of the patient to deliver effective and safe medical care. The sole purpose of these guidelines is to assist practitioners in achieving this objective.
- Advances in medicine occur at a rapid rate. The date of a guideline should always be considered in determining its current applicability.

## IMPLEMENTATION OF THE GUIDELINE

### DESCRIPTION OF IMPLEMENTATION STRATEGY

An implementation strategy was not provided.

## INSTITUTE OF MEDICINE (IOM) NATIONAL HEALTHCARE QUALITY REPORT CATEGORIES

### IOM CARE NEED

Getting Better  
Living with Illness

### IOM DOMAIN

Effectiveness

## IDENTIFYING INFORMATION AND AVAILABILITY

### BIBLIOGRAPHIC SOURCE(S)

Society of Nuclear Medicine. Procedure guideline for parathyroid scintigraphy. Version 3.0. Reston (VA): Society of Nuclear Medicine; 2004 Jun. 6 p.

### ADAPTATION

Not applicable: The guideline was not adapted from another source.

### DATE RELEASED

1999 Feb (revised 2004 Jun)

### GUIDELINE DEVELOPER(S)

Society of Nuclear Medicine, Inc - Medical Specialty Society

### SOURCE(S) OF FUNDING

Society of Nuclear Medicine (SNM)

### GUIDELINE COMMITTEE

Task Force

#### COMPOSITION OF GROUP THAT AUTHORED THE GUIDELINE

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#### FINANCIAL DISCLOSURES/CONFLICTS OF INTEREST

Not stated

#### GUIDELINE STATUS

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#### GUIDELINE AVAILABILITY

Electronic copies: Available from the [Society of Nuclear Medicine \(SNM\) Web site](#).

Print copies: Available from SNM, Division of Health Care Policy, 1850 Samuel Morse Dr, Reston, VA 20190-5316; Phone: 1-800-513-6853 or 1-703-326-1186; Fax: 703-708-9015; E-Mail: [ServiceCenter@snm.org](mailto:ServiceCenter@snm.org).

#### AVAILABILITY OF COMPANION DOCUMENTS

The following are available:

- Society of Nuclear Medicine. Procedure guideline for guideline development. Reston (VA): Society of Nuclear Medicine; 2001 Jun (version 3.0). Electronic copies: Available from the [Society of Nuclear Medicine Web site](#).
- Society of Nuclear Medicine. Performance and responsibility guidelines for NMT. Reston (VA): Society of Nuclear Medicine; 2003. Electronic copies: Available from the [Society of Nuclear Medicine Web site](#).

Print copies: Available from SNM, Division of Health Care Policy, 1850 Samuel Morse Dr, Reston, VA 20190-5316; Phone: 1-800-513-6853 or 1-703-326-1186; Fax: 703-708-9015; E-Mail: [ServiceCenter@snm.org](mailto:ServiceCenter@snm.org).

#### PATIENT RESOURCES

None available

## NGC STATUS

This summary was completed by ECRI on July 20, 1999. It was verified by the guideline developer as of August 5, 1999. This summary was updated by ECRI on May 18, 2005. The updated information was verified by the guideline developer on June 30, 2005.

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